

**WHAT IS CLAIMED IS:**

1           1. In a voice over Internet protocol system including a terminal and a session initiation  
2 protocol server, a terminal registration method using a session initiation protocol, comprising:  
3           transmitting a media access control address to the session initiation protocol server by the  
4 terminal;  
5           retrieving a database, and transmitting terminal information of the terminal corresponding  
6 to the received media access control address to the terminal by the session initiation protocol server  
7 receiving the media access control address from the terminal;  
8           transmitting a register message including the obtained terminal information and designating  
9 a first predetermined value with a field value of a telephone number field to the session initiation  
10 protocol server by the terminal;  
11          retrieving the database, and transmitting user registration information in accordance with the  
12 terminal information received from the terminal to the terminal by the session initiation protocol  
13 sever receiving the register message including the terminal information and designating the first  
14 predetermined value with the field value of the telephone field from the terminal;  
15          requesting the session initiation protocol server to perform registration by using the received  
16 user registration information by the terminal; and  
17          performing the registration of the terminal, and transmitting a registration success message  
18 to the terminal by the session initiation protocol server receiving a registration request signal  
19 including the user registration information from the terminal.

1           2. The method of claim 1, wherein the terminal information includes Internet protocol  
2 address, Subnet, and domain name server information of the terminal.

1           3. The method of claim 1, wherein the user registration information includes a telephone  
2 number.

1           4. The method of claim 1, wherein the first predetermined value transmitted to the session  
2 initiation protocol server from the terminal in the step of transmitting the register message is "0000".

1           5. The method of claim 1, wherein the first predetermined value transmitted to the session  
2 initiation protocol server from the terminal in the step of transmitting the register message is a  
3 predetermined unused telephone number.

1           6. The method of claim 1, wherein the step of transmitting the media access control address  
2 to the session initiation protocol server from the terminal of the step of transmitting the media access  
3 control address, the media access control address is transmitted by using a broadcasting method.

1           7. The method of claim 1, wherein the step of retrieving the database, and transmitting  
2 terminal information of the terminal comprises the sub-steps of:  
3 transmitting the received media access control address to the location server by the proxy

4 server receiving the media access control address from the terminal;

5 retrieving a database, and transmitting terminal information in accordance with the received  
6 media access control address to the proxy server by the location server receiving the media access  
7 control address from the proxy server; and

8 transmitting the received terminal information to the terminal by the proxy server receiving  
9 the terminal information from the location server.

1 8. The method of claim 1, wherein the step of retrieving the database, and transmitting user  
2 registration information comprises the sub-steps of:

3 parsing the register message, and requesting the location server to transmit the user  
4 registration information in accordance with the terminal information by the proxy server receiving  
5 the register message including the terminal information and designating the first predetermined value  
6 with the field value of the telephone number field from the terminal;

7 retrieving the database, and transmitting the user registration information in accordance with  
8 the terminal information to the proxy server by the location server requested to transmit the user  
9 registration information from the proxy server; and

10 transmitting the received user registration information to the terminal by the proxy server  
11 receiving the user registration information from the location server.

1 9. The method of claim 8, wherein a message used to transmit the user registration  
2 information to the terminal from the proxy server is "401 Error Message".

1           10. The method of claim 8, wherein a message used to transmit the user registration  
2 information to the terminal from the proxy server is an error message.

1           11. The method of claim 1, wherein the step of performing the registration of the terminal,  
2 and transmitting a registration success message comprises the sub-steps of:

3           transmitting a received registration message to the location server by the proxy server  
4 receiving the registration message including the user registration information from the terminal;  
5           comparatively analyzing the registration message by parsing the message, performing  
6 registration if the message is successful, and transmitting a success message to the proxy server by  
7 the location server; and

8           transmitting the received success message to the terminal by the proxy server.

1           12. The method of claim 1, wherein a request message includes at least a sequence number,  
2 an identification, and an media access control address and a response message includes at least a  
3 sequence number, an identification, and a reason.

1           13. A computer-readable medium having computer-executable instructions for performing  
2 a method, comprising:

3           transmitting a first address to a session initiation protocol server by a terminal;

4           transmitting terminal information of the terminal corresponding to the received first address

5 to the terminal by the session initiation protocol server receiving the first address from the terminal;  
6 transmitting a register message including the obtained terminal information and designating  
7 a first predetermined value with a field value of a telephone number field to the session initiation  
8 protocol server by the terminal;  
9 transmitting user registration information in accordance with the terminal information  
10 received from the terminal to the terminal by the session initiation protocol sever receiving the  
11 register message including the terminal information and designating the first predetermined value  
12 with the field value of the telephone number field from the terminal;  
13 requesting the session initiation protocol server to perform registration by using the received  
14 user registration information by the terminal; and  
15 performing the registration of the terminal, and transmitting a registration success message  
16 to the terminal by the session initiation protocol server receiving a registration request signal  
17 including the user registration information from the terminal.

1 14. The computer-readable medium having computer-executable instructions for performing  
2 the method of claim 13, wherein the step of retrieving the database, and transmitting terminal  
3 information of the terminal comprises the sub-steps of:

4 transmitting the received first address to the location server by the proxy server receiving the  
5 first address from the terminal;

6 retrieving a database, and transmitting terminal information in accordance with the received  
7 first address to the proxy server by the location server receiving the first address from the proxy

8 server; and

9 transmitting the received terminal information to the terminal by the proxy server receiving  
10 the terminal information from the location server.

1 15. The computer-readable medium having computer-executable instructions for performing  
2 the method of claim 14, wherein the step of retrieving the database, and transmitting user registration  
3 information comprises the sub-steps of:

4 parsing the register message, and requesting the location server to transmit the user  
5 registration information in accordance with the terminal information by the proxy server receiving  
6 the register message including the terminal information and designating the first predetermined value  
7 with the field value of the telephone number field from the terminal;

8 retrieving the database, and transmitting the user registration information in accordance with  
9 the terminal information to the proxy server by the location server requested to transmit the user  
10 registration information from the proxy server; and

11 transmitting the received user registration information to the terminal by the proxy server  
12 receiving the user registration information from the location server.

1 16. The computer-readable medium having computer-executable instructions for performing  
2 the method of claim 15, wherein a message used to transmit the user registration information to the  
3 terminal from the proxy server is an error message.

1           17. The computer-readable medium having computer-executable instructions for performing  
2 the method of claim 15, wherein the step of performing the registration of the terminal, and  
3 transmitting a registration success message comprises the sub-steps of:

4           transmitting a received registration message to the location server by the proxy server  
5 receiving the registration message including the user registration information from the terminal;

6           comparatively analyzing the registration message by parsing the message, performing  
7 registration if the message is successful, and transmitting a success message to the proxy server by  
8 the location server; and

9           transmitting the received success message to the terminal by the proxy server.

1           18. A computer-readable medium having stored thereon a data structure comprising:

2           a first field containing data representing transmitting a media access control address to a  
3 session initiation protocol server by a terminal;

4           a second field containing data representing retrieving a database, and transmitting terminal  
5 information of the terminal corresponding to the received media access control address to the  
6 terminal by the session initiation protocol server receiving the media access control address from the  
7 terminal;

8           a third field containing data representing transmitting a register message including the  
9 obtained terminal information and designating a first predetermined value with a field value of a  
10 telephone number field to the session initiation protocol server by the terminal;

11           a fourth field containing data representing retrieving a database, and transmitting user

12 registration information in accordance with the terminal information received from the terminal to  
13 the terminal by the session initiation protocol sever receiving the register message including the  
14 terminal information and designating the first predetermined value with the field value of the  
15 telephone field from the terminal;

16 a fifth field containing data representing requesting the session initiation protocol server to  
17 perform registration by using the received user registration information by the terminal; and

18 a sixth field containing data representing performing the registration of the terminal, and  
19 transmitting a registration success message to the terminal by the session initiation protocol server  
20 receiving a registration request signal including the user registration information from the terminal.

1 19. The computer-readable medium having stored thereon the data structure of claim 18,  
2 wherein the second field comprises:

3 a first sub-field containing data representing transmitting the received media access control  
4 address to the location server by the proxy server receiving the media access control address from  
5 the terminal;

6 a second sub-field containing data representing retrieving a database, and transmitting  
7 terminal information in accordance with the received media access control address to the proxy  
8 server by the location server receiving the media access control address from the proxy server; and

9 a third sub-field containing data representing transmitting the received terminal information  
10 to the terminal by the proxy server receiving the terminal information from the location server.



1           20. The computer-readable medium having stored thereon the data structure of claim 19,  
2 wherein the fourth field comprises:

3           a first sub-field containing data representing parsing the register message, and requesting the  
4 location server to transmit the user registration information in accordance with the terminal  
5 information by the proxy server receiving the register message including the terminal information  
6 and designating the first predetermined value with the field value of the telephone number field from  
7 the terminal;

8           a second sub-field containing data representing retrieving the database, and transmitting the  
9 user registration information in accordance with the terminal information to the proxy server by the  
10 location server requested to transmit the user registration information from the proxy server; and

11          a third sub-field containing data representing transmitting the received user registration  
12 information to the terminal by the proxy server receiving the user registration information from the  
13 location server.

1           21. The computer-readable medium having stored thereon the data structure of claim 20,  
2 wherein the sixth field comprises:

3           a first sub-field containing data representing transmitting a received registration message to  
4 the location server by the proxy server receiving the registration message including the user  
5 registration information from the terminal; and

6           a second sub-field containing data representing comparatively analyzing the registration  
7 message by parsing the message, performing registration if the message is successful, and

8 transmitting a success message to the proxy server by the location server.

1 22. The computer-readable medium having stored thereon the data structure of claim 21,  
2 wherein the sixth field further comprises:

3 a third sub-field containing data representing transmitting the received success message to  
4 the terminal by the proxy server.

1 23. A voice over Internet protocol system, comprising:  
2 a session initiation protocol server; and  
3 a terminal transmitting a media access control address to the session initiation protocol  
4 server, the session initiation protocol server retrieving a database and transmitting terminal  
5 information of the terminal corresponding to the received media access control address to the  
6 terminal, the terminal transmitting a register message including the obtained terminal information  
7 and designating a first predetermined value with a field value of a telephone number field to the  
8 session initiation protocol server, the session initiation protocol server retrieving the database, and  
9 transmitting user registration information in accordance with the terminal information received from  
10 the terminal to the terminal and designating the first predetermined value with the field value of the  
11 telephone field from the terminal, the terminal requesting the session initiation protocol server to  
12 perform registration by using the received user registration information, and the session initiation  
13 protocol server performing the registration of the terminal and transmitting a registration success  
14 message to the terminal.

1           24. The system of claim 23, wherein the terminal information includes Internet protocol  
2 address, Subnet, and domain name server information of the terminal.

1           25. The system of claim 24, wherein the user registration information includes a telephone  
2 number.

1           26. The system of claim 25, wherein the first predetermined value transmitted to the session  
1 initiation protocol server from the terminal in the step of transmitting the register message is an  
2 unused telephone number.

1           27. A method, comprising:  
2           obtaining a terminal information, with obtaining the terminal information comprising of:  
3                 obtaining a certain set of information of a terminal and a server by using a media  
4 access control address;  
5                 transmitting the media control address by the terminal and at least one of a plurality  
6 of access points to a proxy server;  
7                 requesting by the proxy server to a location server to transmit terminal information  
8 in accordance with the received media access control address;  
9                 transmitting by the location server to the terminal of certain information retrieved  
10 from a database of the terminal in accordance with the media access control address; and

transmitting the certain information retrieved from the database of the terminal to the access points and the access points transmitting the certain information of the terminal and a certain information of the access point to the terminal;

obtaining a telephone number, with the obtaining of the telephone number comprising:

retransmitting the received terminal information to the proxy server through the access points when the terminal receives the terminal information;

setting the telephone number to a predetermined unused telephone number;

considering the authentication of the telephone number from the terminal by the proxy server by the setting of the telephone number to the predetermined unused telephone number;

requesting by the proxy server, the location server to transmit a telephone number and registration information of the corresponding terminal by transmitting the received terminal information to the location server;

transmitting by the location server, the telephone number and the registration information of the corresponding terminal to the proxy server by retrieving a database;

transmitting the received telephone number and registration information to the access point; and

transmitting by the access point the telephone number and registration information of the terminal to the terminal by inputting information obtained within an error message; and registering the terminal.

28. The method of claim 27, with the registering of the terminal, comprising:

2 receiving by the terminal, the telephone number and the registration information from the  
3 proxy server performing a registration process after setting new values with the terminal encoding  
4 the received telephone number and the registration information to a predetermined format;

5 transmitting the telephone number and the information to the access point by using a register  
6 method;

7 sending by the access point, the telephone number and the registration information to the  
8 proxy server;

9 receiving by the proxy server, a register message from the terminal comparing the message,  
10 and when the message is successful, the proxy server transmitting the register message to the  
11 location server, to perform registration; and

12 transmitting by the location server a predetermined successful message after performing the  
13 registration, and when any problem is generated, the location server transmitting a predetermined  
14 error message, and informing of a reason for the error message.

1 29. The method of claim 28, wherein the terminal information includes Internet protocol  
2 address, Subnet, and domain name server information of the terminal.

1 30. The method of claim 29, wherein the user registration information includes a telephone  
2 number.

1           31. The method of claim 27, with the registering of the terminal, comprising:

2           receiving by the terminal, the telephone number and the registration information from the  
3           proxy server performing a registration process after setting new values with the terminal encoding  
4           the received telephone number and the registration information to a predetermined format;

5           transmitting the telephone number and the information to the access point by using a register  
6           method;

7           sending by the access point, the telephone number and the registration information to the  
8           proxy server;

9           receiving by the proxy server, a register message from the terminal comparing the message,  
10          and when the message is successful, the proxy server transmitting the register message to the  
11          location server, to perform registration; and

12          transmitting by the location server a predetermined message informing of a status after  
13          performing the registration .